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㉓ Tool holder.

㉔ A suspension holder for tool shafts and the like, comprising a carrier plate having a U-recess for receiving the shaft and an overlying rubber plate having a slightly smaller U-recess so as to project inwardly over the edges of the U-recess of the carrier plate. A combined friction and clamping holding action is obtained when the shaft is lifted into the recess of the rubber plate so as to bend the projecting edge portions thereof upwardly.

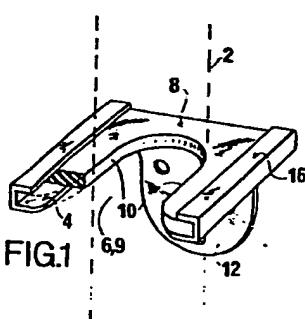


FIG.1

Tool holder.

The present invention relates to a suspension holder for shaft carried implements such as ordinary garden tools. Many different kinds of holders have already been developed for this purpose, but generally the known  
5 holders are not as safe or easily usable as could be desired, and it is the object of the invention to provide an improved holder for this purpose.

A known type of holder which may be considered relevant as background of the invention is disclosed in  
10 the USA Patent Specification No. 3.063.569. It consists of an elongate U-profiled carrier beam mounted on a wall with its open side facing the floor. Along the opposed edges of this opening is secured the outer edges of opposed rubber plate members, which project inwardly  
15 towards each other so as to meet along a middle line lengthwise of the opening of the U-beam. Both of the rubber plate members are provided with slits orthogonal to their length dimension, whereby they are each divided into a row of resiliently bendable finger portions. When  
20 the top end of a tool shaft is forced upwardly through the middle area of the mutually meeting ends of these finger members the fingers will be bent upwardly and thus be caused to engage the shaft frictionally to effectively carry the suspended tool, while the tool shaft is releas-  
25 able by a forced pulling down thereof. However, the purely frictional engagement between the tool shaft and the bent up finger members will not be sufficient to safely hold the tool in a suspended position, if at the same time the tool shall be reasonably easily withdrawable  
30 from the holder by the required downward retraction therefrom.

On this background the invention more specifically

relates to a holder of the type specified in the introductory clause of claim 1, and according to the invention the achieved improvement is obtained by a holder design as specified in the characterizing clause of this claim.

5       The holder according to the invention will be a combined friction and clamp holder for shafts of a certain diameter range. The shaft is easy to introduce in the holder by a combined movement upwardly and inwardly, whereby the edge zones of the resilient plate portions  
10      are bent upwardly, but only to such a degree that the shaft is engaged by the edges themselves. A downward pull in the shaft will then result in an inward clamping action of these edges, while on the other hand the shaft is easy to release when lifted off the holder. A similar  
15      effect is achievable with various known clamp holders based on movable clamping members, but the holder according to the invention has the character of a very simple robust and unitary article.

The invention is described in more detail in the  
20      following, reference being made to the accompanying drawing in which:

Fig. 1 is a perspective view of a preferred embodiment of a holder according to the invention,

Figs. 2 and 3 are plan views thereof,

25      Fig. 4 illustrates the use of the holder, and

Figs. 5 and 6 show raw material members for the production of respective main parts of the holder.

The tool holder shown in Figs. 1-4 comprises a rigid carrier member 4

30      The tool holder shown in Figs. 1-4 comprises a rigid carrier member 4 having a wall mounting plate 12 and a forwardly projecting carrier plate 14, in which there is provided a U-shaped recess 6, while the opposed side edge portions thereof are folded upwardly and inwardly so as to  
35      form open channel portions 16. On the carrier plate 14 is laid a plate member 8 of a rubber like material such as Neoprene, this plate member having opposed edge portions

received and secured in the channel portions 16, these being clamped about the rubber plate edges, and having a U-shaped recess 9, which is similar to the recess 6, though slightly smaller, such that the opposed edges 5 thereof, designate 10, constitute edge zones protruding from the corresponding edges of the lower recess 6.

As shown in Fig. 4 a tool shaft 2 of a suitable standard diameter is insertable into the rubber plate recess 9 by being forced inwardly and upwardly, whereby 10 the opposed edge portions 10 of the rubber plate are bent upwardly without this being prevented by the upper portions 16 of the carrier member. Even if the shaft is merely clamped between the edges 10, these edge portions will at least not be releasably bendable downwardly, because 15 they are supported on the underlying edges of the U-recess 6 of the carrier member. The thicker the shaft, until corresponding to the width of the recess 6, the more the edge portions 10 will be bent upwardly, and by their resiliency they will clamp frictionally against the shaft 20 with their edges biting against the shaft surface, whereby it is practically impossible to draw the shaft downwardly as the rubber plate is otherwise thick and of rigid character.

In a preferred embodiment the rubber plate is rather 25 thick, viz. as thick as or thicker than corresponding to width of the edge portions of the rubber plate as projecting beyond the edge of the lower U-recess 6.

In a practical example, the width of the recess 8 is 29 mm, the width of the recess 6 36 mm, the interior 30 distance between the channel portions 16 50 mm, and the thickness of the rubber plate 4 mm.

In order to preserve the efficiency and the rigid and unitary character of the holder it is preferable to produce various sizes of holders as roughly corresponding 35 to the various standard diameters of usual tool shafts.

In Fig. 5 it is shown that the rubber plate members,

here designated 22, can be punched out of a rubber plate strip with small or no waste of material, and Fig. 6 correspondingly shows that also the carrier members 4, here represented by blanks 20, may be produced 5 economically from a metal sheet strip. The folding lines of the channel portions 16 are designated 26 and 28.

It should be mentioned that a tool holder for relatively thick shafts, e.g. spade shafts, is well suited for the suspension of vacuum cleaner tubes.

CLAIMS:

1. A suspension holder for shaft carried implements and of the type comprising a suspension bracket having an opening for the introduction of an implement shaft and provided with rubber-resiliently bendable plate portions  
5 mounted so as to project into the introduction opening from opposite sides thereof, characterized in that the introduction opening is an outwardly open recess in a carrier plate member of the bracket, and that the bendable plate portions are arranged on the top side of this  
10 carrier plate member so as to project inwardly beyond the edges of the recess to form a narrow edge zone therealong, the bendable plate portions topwise being secured to the bracket in outer areas located outside the side edges of the said recess in the carrier plate member.
- 15 2. A holder according to claim 1, in which the bendable plate portions show a thickness of at least the same magnitude as the width of the said edge zones.
3. A holder according to claims 1 or 2, in which the outer side edges of the carrier plate are folded upwardly  
20 and inwardly for clamping the outer edges of the bendable plate portions, which are constituted by an edge area of a U-shaped recess in a unitary rubber plate member as mounted on the carrier plate.

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